DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: HUBBARD PONI		Lake Area (ha):	75.84
Town: RINDO	SE	Maximum depth (m):	4.9
County: Chesl		Mean depth (m):	1.3
River Basin: Merr	imack	Volume (m³):	905000
Latitude: 42°4		Relative depth:	0.5
Longitude: 71°5'		Shore configuration:	2.55
Elevation (ft):	1108	Areal water load (m/yr)	: 6.83
Shore length (m):	7600	Flushing rate (yr ⁻¹):	5.30
Watershed area (ha	801.8	P retention coeff.:	0.60
<pre>% watershed ponded</pre>	d: 0.2	Lake type: natura	l w/dam

BIOLOGICAL:	10 February 1999	2 September 1998
DOM. PHYTOPLANKTON (% TOTAL) #1	NO WINTER PLANKTON	PERIDINIUM 90%
#2	ANALYZED	MALLOMONAS 9%
#3		
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		8.85
DOM. ZOOPLANKTON (% TOTAL) #1		KELLICOTTIA 29%
#2		NAUPLIUS LARVA 25%
#3		POLYARTHRA 15%
ROTIFERS/LITER		128
MICROCRUSTACEA/LITER		140
ZOOPLANKTON ABUNDANCE (#/L)		268
VASCULAR PLANT ABUNDANCE		Very abundant
SECCHI DISK TRANSPARENCY (m)		2.5
BOTTOM DISSOLVED OXYGEN (mg/L)	9.3	0.3
BACTERIA (E. coli, #/100 ml) #1		< 1
#2		
#3	·	

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None Hypolimnion volume (m^3) : None Anoxic volume (m^3) : 78

: 78800

CHEMICAL:			HUBBARD RINDGE	POND	
	10 Febru	uary 1999	2	September	1998
DEPTH (m)	1.5	3.0	1.0		3.5
pH (units)	5.5	5.6	5.9		5.3
A.N.C. (Alkalinity)	1.2	1.5	1.1		1.8
NITRATE NITROGEN	0.07	0.40	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.40	0.40			
TOTAL PHOSPHORUS	0.009	0.010	0.013		0.026
CONDUCTIVITY (µmhos/cm)	30.7	33.1	22.8		23.8
APPARENT COLOR (cpu)	49	47	50		90
MAGNESIUM			0.33		
CALCIUM			1.3		
SODIUM			2.2		
POTASSIUM			< 0.40		
CHLORIDE	3	3	3		2
SULFATE	5	4	3		3
TN : TP	52	80			
CALCITE SATURATION INDEX			5.2		

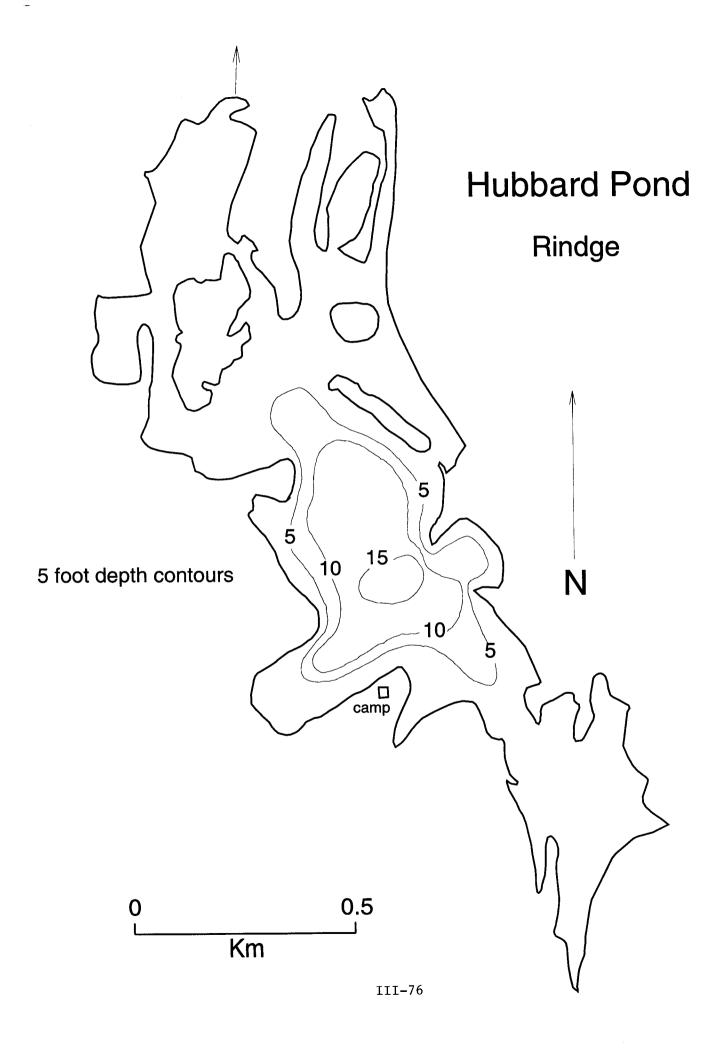
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1998

I	0.0.	s.D.	PLANT	CHL	TOTAL	CLASS
	**	3	6 -	2	11	Eutro.

COMMENTS:

- 1. This pond was previously surveyed and classified in 1979. There was no change in trophic class and little change in trophic quality between the two dates.
- 2. Hubbard Pond is a moderately acidic, tea-colored eutrophic pond with very abundant rooted plant growth. Nutrient levels were not excessive.
- 3. This is essentially a small pond surrounded by shallow-water wetlands created by raising the water level by damming. It is naturally eutrophic, primarily because of the wetland plant growth.
- 4. There was only one seasonal juvenile camp and no other development on the pond.



FIELD DATA SHEET

LAKE: HUBBARD POND TOWN: RINDGE

DATE: 09/02/1998 WEATHER: OVERCAST & BREEZY

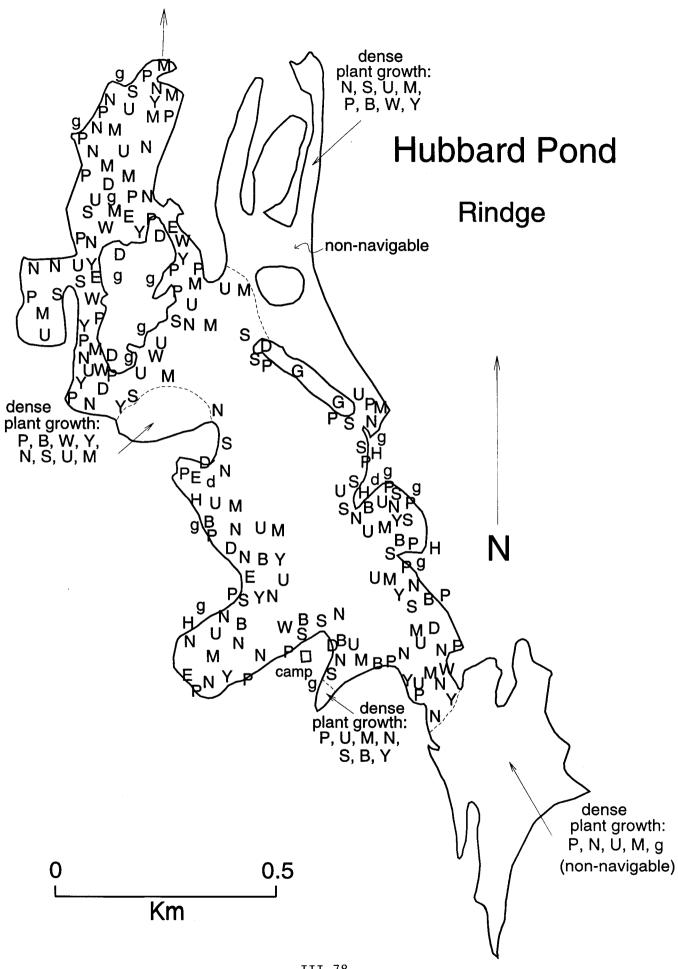
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION		
	0.1	22.5	7.8	90 %		
	1.0	22.3	7.7	88 %		
	2.0	22.1	7.3	84 %		
	3.0	20.5	0.9	10 %		
	4.0	17.4	0.3	3 %		
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SECCHI DISK (m): 2.5 COMMENTS:

BOTTOM DEPTH (m): 4.3

TIME: 1130

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

E: HUBBARD POND	OWN: RINDGE	DATE: 09/02/1998				
Key PLANT NAME ABUNDANCE						
GENERIC	COMMON	ABONDANCE				
Sparganium	Bur reed	Abundant				
Myriophyllum humile	Water milfoil	Abundant				
Pontederia cordata	Pickerelweed	Abundant				
Nymphaea	White water lily	Abundant				
Myrica gale	Sweet gale	Scattered				
Brasenia schreberi	Water shield	Scat/Common				
Decodon verticillatus	Swamp loosestrife	Scattered				
Utricularia	Bladderwort	Abundant				
Potamogeton	Pondweed	Scattered				
Eriocaulon septangulare	Pipewort	Sparse				
Hypericum boreale	St. John's-wort	Sparse				
Dulichium arundinaceum	Three-way sedge	Scattered				
Nuphar	Yellow water lily	Scat/Common				
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	GENERIC Sparganium Myriophyllum humile Pontederia cordata Nymphaea Myrica gale Brasenia schreberi Decodon verticillatus Utricularia Potamogeton Eriocaulon septangulare Hypericum boreale Dulichium arundinaceum	PLANT NAME GENERIC COMMON Sparganium Bur reed Myriophyllum humile Water milfoil Pontederia cordata Pickerelweed Nymphaea White water lily Myrica gale Sweet gale Brasenia schreberi Water shield Decodon verticillatus Swamp loosestrife Utricularia Bladderwort Potamogeton Pondweed Eriocaulon septangulare Pipewort Hypericum boreale St. John's-wort Dulichium arundinaceum Three-way sedge				

OVERALL ABUNDANCE: Very abundant

GENERAL OBSERVATIONS:

- 1. This is essentially an open-water wetland. Approximately one-third of the pond was non-navigable because of dense plant growth and shallow water.
- 2. All plant growth were native species, including the milfoil species present.
- 3. Phytoplankton was dominated by *Peridinium*, a dinoflagellate typical in tea-colored waters.